

Horticultural Education in Entrepreneurship Development

Sweety Sharma¹, P.D. Srikanth² & S.K. Soam³

¹Research Associate, National Agriculture Higher Education Project (NAHEP), ICAR- National Academy of Agricultural Research Management (NAARM) Hyderabad

²Principal Scientist, ICAR- National Academy of Agricultural Research Management (NAARM) Hyderabad

³HoD, ICM Division, ICAR- National Academy of Agricultural Research Management (NAARM) Hyderabad

ARTICLE ID: 088

Introduction

Horticulture is growing field of agriculture that deals with the cultivation and process of plants, fruits, vegetables, flowers, aromatic and medicinal plants. Now days, more people attracted towards horticulture sector will increase as a result of government specializing in this sector because of its important contribution within the economy as food production, employment generators and industrial stuff supplier. Relaxation, privatization and globalisation of world trade additionally generated the opportunities of employment for teenagers across the country. Our study focused on the horticultural field for employment, sector wise job opportunities and indicated that a candidate when completion of graduation or post-graduation is eligible for many more horticultural career opportunities in entrepreneurship development.

Scope of Horticulture in India

India has great variety of climate and edaphic conditions which can be exploited by growing horticultural crops. Climates are varying from tropical, subtropical and temperate regions. Thus horticulture has great scope for the following reasons:

- ❖ To exploit great variability of agro-climatic conditions.
- ❖ To meet the need for fruits, vegetables, flowers, spices beverages in relation to population growth and nutritional requirement.
- ❖ To meet the requirement of processing industries.
- ❖ For increasing export and import of horticultural products.
- ❖ To improve economical condition of the farmers.

- ❖ To generate employment opportunity for labour and human being.
- ❖ To protect environment.
- ❖ To encourage vegan organic horticulture produced in greenhouses or in the open field. Vegan organic production (in contrast to vegetarian = eating no meat) excludes all animal inputs into plant production (e.g., manure, blood-meal or horn-meal).

Entrepreneurial Opportunities in Horticulture Sectors

Horticulture is a wide field and includes a good selection and variety of crops. Increasing opportunities have emerged for developing entrepreneurship in horti-business sector especially for fruits, vegetables, flowers & other plants.



1. **Urban Farming:** Urban farming can be classified into large number of types based on area, type of commodity produced, multiple method and medium used for cultivation. The following are common types of urban farming.
 - a. **Kitchen gardening:** Cultivation of vegetable and herbs in and around the domestic area for daily kitchen use. It is a very small scale cultivation, wherein, the products are used for household purpose and there is no excess production for sale. This is to meet daily needs of a small family and to become less dependent on the market availability.
 - b. **Rooftop gardening:** cultivation of vegetables and herbs on the roof of a house or an apartment by single or group of families to meet the daily needs of a family or a community. The focus here is to utilize empty space available on the rooftop and reduce dependence on the markets.
 - c. **Vertical farming:** Cultivation of crops in vertically stacked layers. The main advantage of vertical farming technologies is the increased crop yield per unit area utilized. The vertical farming can be followed in tall apartments, abandoned old buildings and also on walls. The focus here is to multiply the minimum area available to produce vegetables.

- d. **Green house horticulture:** the large empty areas in and around the locality can be covered with the greenhouse for production of high value crops. These can be managed by an individual or community or commercial owners. The greenhouses are known for the production of high value crops under controlled environmental conditions and yield higher quantity of produce than open field cultivation. The products also fetch better price in the markets and the produce if healthy is accepted in the supermarkets for sale.

Some Existing Colleges/ Universities may offer urban farming courses

1. Republic Polytechnic (@ Woodlands Avenue 9, Singapore): Urban Farming
2. Oregon State University (@ Corvallis, United States): Urban Farming
3. Sri Sri Institute of Agricultural Science & Technology, Udayapura, Bangalore: Home gardening or Kitchen gardening
4. Institute of Horticulture Technology (recognised by Ministry of Agriculture & Farmer Welfare, Govt. of India), New Delhi: Urban Farming
5. Progressive Education Society, Modern college of Arts, Science and Commerce, Pune: Green House

II. Agro-Industries

- a. **Fresh turn out handling:** Fruits and vegetables area unit created seasonally, however the market needs product throughout the year. Multiplied consumer incomes and year-around demand for recent turn out, force retailers or their representatives to determine buying points in growing areas of the country. Supermarkets are spreading very fast in developing countries for the past decade. To secure prime quality, the entrepreneur got to directly supply recent turn out from farmers from their villages through assortment centres. Existing recent turn out handling units in India: ITC' Choupal recent, Heritage's Fresh@, ABRL's a lot of, RPG's Spencer's Retail, Reliance Fresh's Ranger Farms, Big Bazar, Namdharirecent, Big basket and Metro.
- b. **Turf grass operation:** Turfgrass operations program is designed to train individuals for entry-level positions in the areas of home lawn care worker, turfgrass grower, golf course attendant and turf and grounds workers for park districts, as well as public and private institutions. In addition, it provides opportunities to individuals already



employed in a horticulture business to gain knowledge and skills necessary for upward mobility in their chosen field.

- a. Landscape technician (establishes and maintains landscape)
- b. Golf course architect (designs a golf course)
- c. Golf course superintendent (supervises the construction and maintenance of the golf course)

c. Tissue culture

Demand and supply of tissue cultured plants: With increasing demand for agricultural, forestry, plantation and horticulture crops, the demand for high-quality, high-yielding, disease-free planting stock has inflated considerably over the last 20 years. Plant tissue culture has emerged as a vital biotechnology and commercially viable tool to multiply elite sorts of top quality, disease free and high yielding plants within the laboratory no matter the season of the year.

State agriculture and horticulture departments are promoting tissue cultured plants through area expansion programme, Agro Export Zones. At present only 6-7% of these are using Tissue Cultured Plants (TCPs), a larger number of factories are expected to shift over to TCPs in the next 3-5 years. More than registered seed companies require millions of doubled Haploids plants of various crop species in their plant breeding programme.

d. Scope of Floriculture

This sector has created ton of entrepreneurial opportunities due to High returns per unit space, higher employment chance and increasing market with rise in financial gain. As a result of The International market is growing @ 8-10 % annually. The International demand is around Rs. 90,000 crore/ year and domestic market at 20-25 %. Hence, the scope to enter horticulture business in India is unlimited.

Some Exiting Colleges/ Universities may offer certification courses

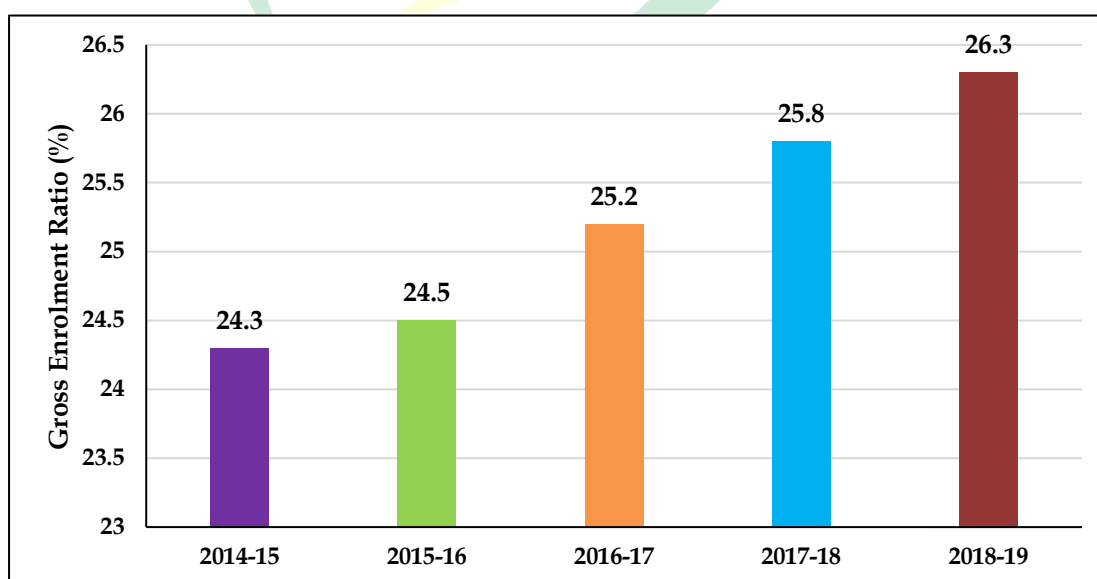
1. Michigan State University, USA: Turfgrass Management Course
2. Melbourne Polytechnic, Australia: Turfgrass Management Courses
3. Alamo College District, USA: Turfgrass Management Courses
4. Miracosta College, USA: Floriculture & Landscaping Courses
5. Otago Polytechnic, New Zealand: Turfgrass Management Courses
6. Centennial College, Toronto, Canada: Plant Cell Tissue Culture, Courses

Educational Gateways for Education in Horticulture Sectors

The ICAR has taken many measures to draw in talent and popularize horticultural education within the country. ICAR has been conducting the All India Entrance Examination for Admission (AIEEA) exams for many years to encourage proficient students through funding to take-up horticulture as their subject for teaching. Besides this, ICAR has additionally initiated many fellowship schemes, each national and international, to market teaching and encourage horticulture graduates to require up analysis as a career possibility.

Degree courses in eleven UG disciplines square measure offered with a stress on learning through hands-on-practice sessions and field expertise coaching. The PG programmes square measure offered in concerning ninety five disciplines. As per the tentative figures of HRD ministry (2012), the Gross Enrolment Ratio (GER) for higher education in India has shot up from 12.4 to 26.3 try to if identical trend continues, by 2029, it's expected to attain the figure of 30-35%.

The New Education Policy ensures to extend the GER in teaching to 50% by 2035. The trend of GER in teaching over the previous couple of years (Fig.1.). The Gross Enrolment Ratio (GER) for Agricultural Education, out of the overall eligible population within the country, is below 1% that is terribly low. Within the recent past, the amount of candidates particularly for UG admissions has augmented considerably showing growing interest towards teaching in agriculture.



Hotspots of Horticultural Crops in India

Horticulture has emerged as a bright hotspot in Indian agriculture by defying consecutive years of crippling drought and registering record production last year. Better access to irrigation and higher demand from consumers pushed small farmers to grow more fruits and vegetables. Production of horticulture crops overtook that of food grains for the fourth straight year in 2016-17—295 million tonnes.

An analysis of state-wise production (Fig. 2) shows that top hotspot states in fruits with 17.61MT was retained by Andhra Pradesh (AP) in 2018-19. It was followed by Maharashtra (10.82 MT) and UP (10.65 MT). West Bengal's share in total vegetable production is 15.9 % of the country's total vegetable production. UP accounted for 14.9 % of the total vegetable production. Looking at our results, we say that wherever there is maximum food and vegetable production, there will be more food processing unit, so that our economy will grow further.

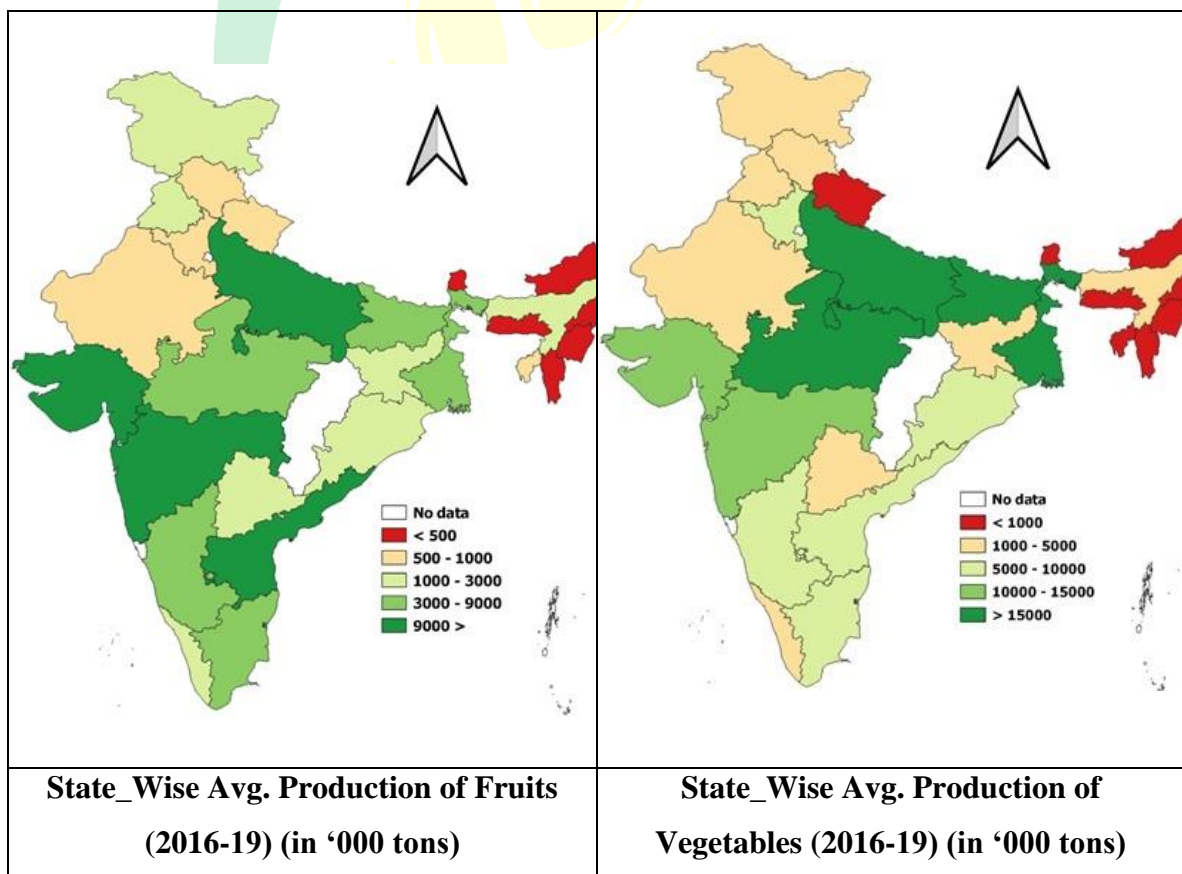


Fig. 2 State wise average production of fruits & vegetables (2016-19)

Importance of the Horticulture Sector



Horticulture crops perform a vital role in the Indian economy by generating employment, providing raw material to various food processing industries, and higher farm profitability due to higher production and export earnings from foreign exchange.

- ❖ It will help to encourage the smart food production and enhancing nutritional security (smart protein).
- ❖ They are a good source of nutrients, vitamins, minerals, flavour, aroma, dietary fibres, etc.
- ❖ They contain health benefiting compounds and medicines.
- ❖ They have national and international demand and are a good source of foreign exchange.

Shift in Horticulture: The Future

Opportunities in the horticulture industry are plentiful; but to be successful, a person must possess technical and personal skills. People working in horticulture must master a number of technical skills, including plant care, mechanics, and business. Personal skills are a person's abilities to relate to others productively. Jobs and careers in horticulture can be as employees or entrepreneurs in landscape horticulture, floriculture, olericulture, pomology, turfgrass, and other general areas.

The sector is gaining ton of importance due to its nutritional value, additional trendy, scientific and technology-oriented and conjointly for its higher export potentiality exist within the trade of the many perishable horticultural produce. This study shows there's ton of entrepreneurial chance in farming that has to be tapped properly to boost the economy of Indian nation. Specialization in horticulture opens up a world of possibilities for students who have chosen to pursue an education in this field.